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## PATENT ABSTRACTS OF JAPAN

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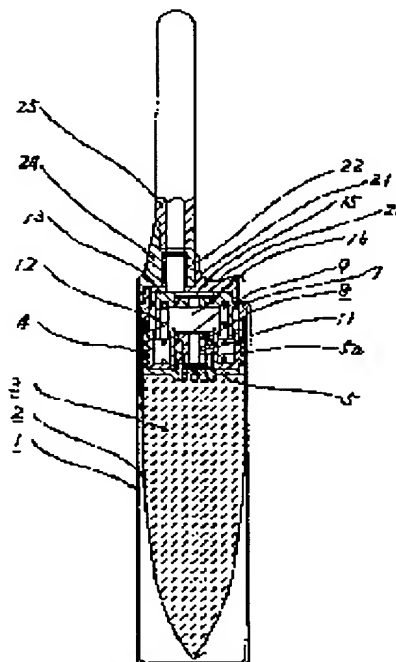
(72)Inventor : USAMI HIDEYUKI

## (54) CARTRIDGE TYPE DISCHARGE VESSEL

## (57)Abstract:

**PROBLEM TO BE SOLVED:** To enable a liquid storage chamber to be mounted on a connection sleeve simply by forming a connection sleeve at a connection part relative to the liquid storage chamber of a discharge vessel, allowing the connection sleeve to be fitted in the liquid storage chamber in closed relation, and rendering the inside volume of the connection sleeve smaller than the insertion volume of the connection sleeve to the liquid storage chamber.

**SOLUTION:** In a cartridge type discharge vessel for liquid such as hair liquid, a vessel main body 1 is formed by including a bag body 3 therein, and the bag body 3 is secured to the lower side wall surface of a cylindrical member 4. In a piston 8, an inside hole is made, and a connection sleeve 11 is included in the inside hole, and further the lower end of the connection sleeve 11 is made into a press-down part. The press-down part is to permit the whole of a plug to be pressed downward to open during the mounting of the bag body 3 onto the vessel main body 1. Herein, the inside volume of the connection sleeve 11 is set to be smaller than the inside volume of a connection mouth part after the connection of a plug. In addition, a cylinder 13 urged upward by means of a spring 12 is secured sealingly slidably relative to the piston 8.



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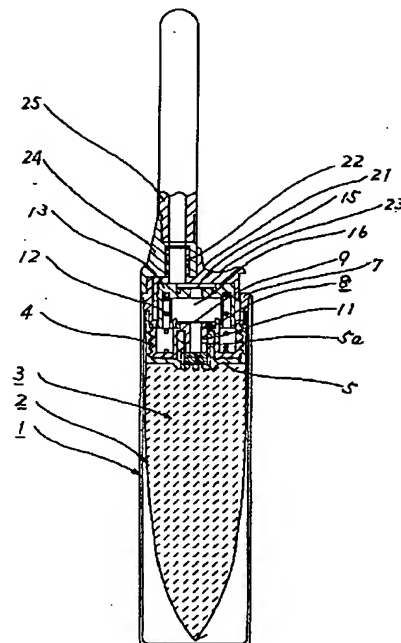
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(54) 【発明の名称】 カートリッジ式吐出容器

(57) 【要約】

【課題】 カートリッジ式吐出容器の筒状体に可変容積機構を取り付けるに際しては、流動体収容部の流動体がこぼれ出ないように、可変容積機構を上向きに把持して注意深く筒状体に差し込む必要があり、非常に困難な作業であった。また、可変容積機構を筒状体に取り付けた後、使用に当たってノズルから流動体を吐出せしめるためには、可変容積機構の下部を押圧して流動体を上部に押し上げることで流動体収容部上部の残留空気を中間室側に追い出して逆止弁付近を流動体で液密にするという、所謂呼び水操作が必要であり、使用開始時、また、スベアカートリッジの交換時の取り扱いが非常にやっかいなものであった。

【解決手段】 液体貯留室の液体を吐出口部から吐出させるカートリッジ式吐出容器にあって、前記吐出容器の液体貯留室に対する接続部に接続筒部を形成し、その吐出容器の接続筒部を前記液体貯留室に密閉嵌着させると共に、前記吐出容器の接続筒部の内側容積を、接続筒部の前記液体貯留室の内への挿入容積よりも少なくした。



## 【特許請求の範囲】

【請求項 1】 液体貯留室の液体を吐出容器の吐出口から吐出させるカートリッジ式吐出容器にあって、前記吐出容器の液体貯留室に対する接続部に接続筒部を形成し、その吐出容器の接続筒部を前記液体貯留室に密閉嵌着させると共に、前記吐出容器の接続筒部の内側容積を、接続筒部の前記液体貯留室の内への挿入容積よりも少なくしたことを特徴とするカートリッジ式吐出容器。

【請求項 2】 請求項 1 に記載の吐出容器であって、前記液体貯留室の接続部にも接続筒部を形成し、その接続筒部内に前記吐出容器の接続筒部を嵌着したことを特徴とするカートリッジ式吐出容器。

## 【発明の詳細な説明】

## 【0001】

【発明の属する技術分野】本発明は、整髪料、髪染め液、育毛液、化粧用乳液、ハンドクリーム、ファンデーション、洗髪用シャンプー、リンス、液状の歯磨粉、マヨネーズ、ケチャップ、糊、絵の具などの液体のカートリッジ式吐出容器に関する。

## 【0002】

【従来の技術】液体貯留室の液体を吐出口部から吐出させるカートリッジ式吐出容器の一例として、実開昭 54-34641 号公報がある。前記公報の図 4 においては、胴部 A とヘッド部 D とよりなり、胴部 A は流動体収容部 7 を備えた筒状部 B と前記流動体収容部 7 と前記ヘッド部 D とを接続する中間室 8 を形成している中間部 C とよりなり、流動体収容部 7 は密閉状態でその内容積を変化可能ならしめる可変容積機構 12 を有しており、ヘッド部 D と中間室 8 との間および流動体収容部 7 と中間室 8 との間には逆止弁 9 を備えている。可変容積機構 12 を筒状部 B に取り付けた後、ヘッド部 D を押圧せしめることによって、ノズル 10 から流動体を吐出せしめるというものである。

## 【0003】

【発明が解決しようとする課題】しかし、上記の従来技術にあっては、筒状部 B に可変容積機構 12 を取り付けに際しては、流動体収容部 7 の流動体がこぼれ出ないように、可変容積機構 12 を上向きに把持して注意深く筒状部 B に差し込む必要があり、非常に困難な作業であった。また、可変容積機構 12 を筒状部 B に取り付けた後、使用に当たってノズル 10 から流動体を吐出せしめるためには、可変容積機構 12 の下部を押圧して流動体を上部に押し上げることで流動体収容部 7 上部の残留空気を中間室 8 側に追い出して逆止弁 9 付近を流動体で液密にするという、所謂呼び水操作が必要であり、使用開始時、また、スベアカートリッジの交換時の取り扱いが非常にやっかいなものであった。

## 【0004】

【課題を解決するための手段】本発明は上記問題点を解決するためになされたものであり、液体貯留室の液体を

吐出容器の吐出口から吐出させるカートリッジ式吐出容器にあって、前記吐出容器の液体貯留室に対する接続部に接続筒部を形成し、その吐出容器の接続筒部を前記液体貯留室に密閉嵌着させると共に、前記吐出容器の接続筒部の内側容積を、接続筒部の前記液体貯留室の内への挿入容積よりも少なくしたことを要旨とする。

## 【0005】

【作用】吐出容器の接続筒部を液体貯留室に嵌着すると、その接続筒部の内側容積と、接続筒部の液体貯留室の内への挿入容積の容積比で、液体貯留室内の液体が第 1 の弁上まで上昇する。

## 【0006】

【実施例】添付図面に基づき一例を説明する。容器本体 1 は内部に液室（液体貯留室）2 を形成する軟質の袋体 3 を収容している。その軟質の袋体 3 の使用は、収容する液の消費に応じて収縮し、外気の混入を防止できる上で容易な手段である。この軟質の袋体 3 は、合成樹脂製の筒状部材 4 の下側周壁面にヒートシールなどにより液漏れしないよう取り付けられている。また、筒状部材 4 の内周壁面下方には鍔部 5 が形成されており、その鍔部 5 の中央に接続口部 5a を有している（図 1、図 2 参照）。前記接続口部 5a は、本例では、鍔部 5 の上方へ突出する筒状の形状になっており、外周壁面の上端近くに全周突起 5b が形成され、内周壁面の上端近くに全周突起 5c が、また、内周壁面の下方には凹溝 5d と凸部 5e がそれぞれ 1ヶ所ないし複数箇所に形成されている。接続口部 5a の内側上部には栓体 6 が嵌合配置されているが、この栓体 6 には外周面に全周溝 6a が形成され、この全周溝 6a が前述した接続口部 5a の内周面の全周突起 5c と係合して接続口部 5a を密封している（図 3、図 4 参照）。

【0007】口部材 7 は内側にピストン部 8 を有している。そのピストン部 8 には図面上方に開放できる弁 9 が取り付けられている。また、ピストン部 8 には内側孔 10 が形成され、その内側孔 10 内に接続筒部 11 を有し、その接続筒部 11 の下端は端面の一部を切り欠かれた押下部 11a となっている。押下部 11a は、前記軟質の袋体 3 を容器本体 1 に装着する際、密封している栓体 6 を押下せしめて開栓するためのものである。ここで、接続筒部 11 の内側の容積は栓体 6 を係合した後の接続口部 5a の内容積よりも小さくなるように設定されている。具体的に本例の場合で説明すると、接続筒部 11（押下部 11a を含む）の内側の容積は 2cc に形成されており、接続口部 5a に挿入される接続筒部 11（押下部 11a を含む）の肉の体積は 1cc になっている。また、接続口部 5a の内容積は 3cc に形成されている。作用については後述する。

【0008】弾撥体 12 により図面上方に付勢されたシリンダー 13 が前記ピストン部 8 に対して液密摺動可能に取り付けられているが、そのシリンダー 13 の内周壁

に唯一設けた弾性環状突部14が前記ピストン部8の外周壁に対する液密摺動部となっている。また、シリンダー13には、前記弁9同様、図面上方に開放できる弁15が取り付けられている。その弁15は、弁9から前記シリンダー13の内孔16に出てきた液の出口となるものである(図5参照)。

【0009】尚、前記弁9や弁15について詳述すると、外周リング部17の内側中間部には実質的な弁となる弁蓋18が位置しており、その弁蓋18の下面には円周突起19が形成されている。この円周突起19が前記ピストン部8の端面8aやシリンダー13の端面13aに接触していることによって下方への拡開が阻止されている。また、前記外周リング部17と弁蓋18とは、円弧状の3つの連結片20によって連結されている(図6、図7参照)。できるだけ軽い力で開閉し、それでいて密閉度が高い構造になっている。また、前記弁の材質の具体例としては、シリコーンゴムやニトリルゴム、アクリルゴム、フッ素ゴム、天然ゴム、クロロブレンゴム、ブチルゴム、ネオブレンゴム、SBR、NBR、エラストマー、軟質ポリエチレンなどのゴム状弾性体や、PETやポリエチレン、ポリ塩化ビニル、ナイロンなど単層構造からなるフィルム状の軟質部材が挙げられるが、そのフィルム状の軟質部材は、PETの下面にポリエチレンを貼着したものやPETの下面にポリプロピレンを貼着したものなど2層構造としても良い。また、アルミ箔の上面にPETを貼着するとともに下面にポリエチレンを貼着したものやアルミ箔の上面にPETを貼着するとともに、下面にポリプロピレンを貼着したものなど3層構造のものであっても良い。さらには、塩化ビニリデンでコートしたPETの下面にポリエチレンを貼着したものや塩化ビニリデンでコートしたPETの下面にポリプロピレンを貼着したもの、酸化ケイ素でコートしたPETの下面にポリエチレンを貼着したもの、酸化ケイ素でコートしたPETの下面にポリプロピレンを貼着したもの、PETの下面にホットメルト系の樹脂をコートしたものなどであっても良い。要は、この弾性弁も使用する液体によって適宜選択可能である。

【0010】前記シリンダー13の上部には、押圧部材21が固定されており、その押圧部材21には前記弁15から吐出した液体の出口となる吐出口部22が形成されている。符号23は、押圧部材21を押圧するとき人差し指などを当てがう凹部である。また、その押圧部材21の吐出口部22には、連結部材24を介してノズル部材25が液密摺動可能に取り付けられている。尚、本例においては連結部材24を容器本体1に固定することによって、前記押圧部材21の吐出口部22を液密摺動させているが、押圧部材21に直接前記ノズル部材25を固定しても良い。

【0011】次に、使用例について説明する。カートリッジ(軟質の袋体3)の交換に際しては、先ず、前述の

口部材7を容器本体1より取り外し、次に、筒状部材4を口部材7より取り外す。そして、液体を充填した軟質の袋体3を、筒状部材4を把持して口部材7に取り付ける(本例では、ねじによる取付を図示したが、ねじ込み式以外にも種々の着脱方式が可能である)。筒状部材4をねじ込んでいくと、先ず、接続口部5aがピストン部8の内側孔10に入り込み、全周突起5bにより内側孔10を密閉する。次いで、接続筒部11の押下部11aが接続口部5aを密封している栓体6を押し下げて開栓する。この状態で、例えば容器本体1および軟質の袋体3を横倒しするようなことがあっても、すでにピストン部8の内側孔10が接続口部5aの全周突起5bにより密閉されているので、軟質の袋体3に充填された液体が内側孔10の外へこぼれるというような問題は生じない。

【0012】更に筒状部材4をねじ込んでいくと、押下部11aが栓体6を更に押し下げる。ここで、栓体6が接続口部5aの下方に形成された凹溝5dにさしかかると、接続口部5aに充填した液体が、栓体6および筒部11の下方移動に伴う接続口部5aの排斥分量だけ凹溝5dから押下部11aを通して栓体6の上方、すなわち口部材7の接続筒部11内に押し上げられる。栓体6が凸部5eに至ると、接続口部内に充填していた液体はすべて接続筒部11の内方へ移動するが、前述の通り、接続筒部11の内側の容積が栓体6に係合した後の接続口部5aの内容積よりも小さくなるように設定されているので、接続筒部11内には収まりきらずに弁9の弁蓋18を押し上げ内孔16に達する。これで、弁9を介して液室(液体貯留室)2とピストン部8の接続筒部11およびシリンダー13の内孔16が液密に連通の状態となり、次の使用準備がなされたことになる。第8図は、軟質の袋体3を容器本体1の口部材7に取り付けた状態(次の使用準備完了)を示す要部拡大図である。

【0013】前記の状態、容器本体1を握って押圧部材21を押圧すれば、シリンダー13が弾撥体12の弾発力に抗して図面下方に摺動する。次いで、押圧部材21の押圧を解除すれば、弾撥体12の弾発力によってシリンダー13が図面上方に摺動(復帰)し、このとき、弁9が開放してピストン部8の筒部11の内側からシリンダー13の内孔16へ液体が吸い上げられる。次に押圧部材21を押圧すれば、シリンダー13がまた図面下方に摺動し、このとき、弁15が開放してシリンダー13の内孔16内からノズル部材25の吐出孔(図示しない)の方へ液体が吐出する。ここで押圧部材21の押圧を解除すれば、弾撥体12の弾発力によってシリンダー13がまた図面上方に摺動(復帰)し、弁9が開放してピストン部8の筒部11の内側からシリンダー13の内孔16へ液体が吸い上げられ、また、次の使用準備がなされることになる。

【0014】第9図は、本発明の第2例である。前記例

と同様な構成はその説明を省略する。この第2例では、前例の接続口部5aに嵌合配置されている栓体6の代わりに、接続口部5aと一体に薄膜蓋部26が形成されている。また、前例の接続筒部11下端の押下部11aの代わりに先鋭部27が形成されている。先鋭部27の端面は前例と同様に一部を切り欠かれた形状になっている。

【0015】カートリッジ（軟質の袋体3）の交換に際しては、筒状部材4をねじ込んでいくと、先ず、接続口部5aがピストン部8の内側孔10に入り込み、全周突起5bにより内側孔10を密閉する。次いで、接続筒部11の先鋭部27が接続口部5aを密封している薄膜蓋部26を切り取って開栓する。この状態で、例えば容器本体1および軟質の袋体3を横倒しすることがあっても、すでにピストン部8の内側孔10が接続口部5aの全周突起5bにより密閉されているので、軟質の袋体3に充填された液体が内側孔10の外へこぼれるというような問題は生じない。更に筒状部材4をねじ込んでいくと、接続口部5aに充填した液体が、薄膜蓋部26および接続筒部11の下方移動に伴う接続口部5aの排斥分量だけ凹溝5dから先鋭部27を通して薄膜蓋部26の上方、すなわち口部材7の接続筒部11内に押し上げられる。第10図は、軟質の袋体3を容器本体1の口部材7に取り付けた状態（次の使用準備完了）を示す要部拡大図である。

【0016】第11図ないし第14図は、本発明の第3例である。前記例と同様な構成はその説明を省略する。この第3例では、接続口部28に、接続口部28と一体の薄膜蓋部28aが形成されている。また、内周壁面の上端近く（薄膜蓋部28aの上方）に全周突起29が形成されている。ピストン部30の下方は、前記接続口部28内周壁面の全周突起29に嵌合する筒部31となっており、下端には、薄膜蓋部28aを切り取るための先鋭部32が形成されている。筒部31の内孔32aは、筒肉部32bの体積に対する容積比を小さくするために複数の凸条33を有する異形断面形状の孔になっている。薄膜蓋部28aの周縁部は切り取る際の切り易さを考慮して薄膜周縁28bになっているが、周縁部の一部は肉厚部28cとなっている。後述するカートリッジの取付の際、この肉厚部28cは、先鋭部32に切り取られることなく、先鋭部32が接続口部28に入り込むに従って図面下方に屈曲する。薄膜蓋部28aが切り取られて脱落するのを防止するためである。参照符号28dの凹部は、肉厚部28cを残して切り取られ、筒部31に押し下げられた薄膜蓋部28aを接続口部28内に積み込むための空隙である。

【0017】カートリッジ（軟質の袋体3）の交換に際しては、筒状部材4をねじ込んでいくと、先ず、接続口部28に筒部31の先鋭部32が入り込み、全周突起29に嵌合して密閉される。次いで、筒部31の先鋭部3

2が接続口部28を密封している薄膜蓋部28aを切り取って開栓する。この状態で、例えば容器本体1および軟質の袋体3を横倒しすることがあっても、すでに筒部31の先鋭部32が接続口部28の全周突起29により密閉されているので、軟質の袋体3に充填された液体が外へこぼれるというような問題は生じない。更に筒状部材4をねじ込んでいくと、接続口部28に充填した液体が、薄膜蓋部28aおよび筒部31の下方移動に伴う接続口部28の排斥分量だけ上方に押し上げられる。第13図は、軟質の袋体3を容器本体1の口部材7に取り付けた状態（次の使用準備完了）を示す要部拡大図である。

【0018】第15図ないし第16図は、本発明の第4例である。前記例と同様な構成はその説明を省略する。この第4例は、前記第3例における接続口部28のうち、薄膜蓋部28aより下方の部分がないもので、接続口部28の回りに罅部34が形成されている。罅部34の外周は図面下方にのびた筒状部材下部35と一体になっている。また、筒部31の下端は第3例とは異なり全周に内側テーパ状の切刃が形成された全周先鋭部36となっている。罅部34の上面には円周突起37が形成されている。カートリッジ（軟質の袋体3）の交換に際しては、筒状部材4をねじ込んでいくと、接続口部28に全周先鋭部36が入り込み、接続口部28に嵌合して第1の密閉がなされる。次いで、全周先鋭部36が薄膜蓋部28aを切り取って開栓する。更に筒状部材4をねじ込んでいくと、薄膜蓋部28aおよび筒部31の下方移動に伴う排斥分量だけ液体が上方に押し上げられる。筒状部材4のねじ込み終わりの状態で前記円周突起37が口部材7の底面に押し付けられ、カートリッジ取付の第2の密閉がなされる。第16図は、軟質の袋体3を容器本体1の口部材7に取り付けた状態（次の使用準備完了）を示す要部拡大図である。尚、筒状部材下部35は軟質の袋体3が全周先鋭部36に触れて傷ついたりしないよう保護するために設けられたものである。

【0019】

【発明の効果】本発明のカートリッジ式吐出容器は、液体貯留室の液体を吐出容器の吐出口から吐出させるカートリッジ式吐出容器にあって、前記吐出容器の液体貯留室に対する接続部に接続筒部を形成し、その吐出容器の接続筒部を前記液体貯留室に密閉嵌着させると共に、前記吐出容器の接続筒部の内側容積を、接続筒部の前記液体貯留室の内への挿入容積よりも少なくしたので、液体のこぼれを心配することなく、簡単に、液体貯留室を吐出容器の接続筒部に装着することができ、また、カートリッジ装着後においても容易に液体を吐出させることができる。

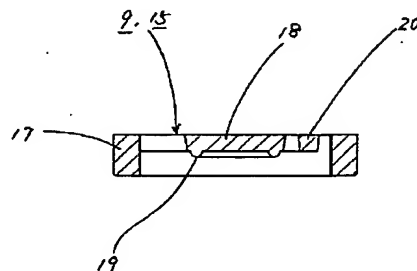
【図面の簡単な説明】

【図1】本発明を示す右側面図。

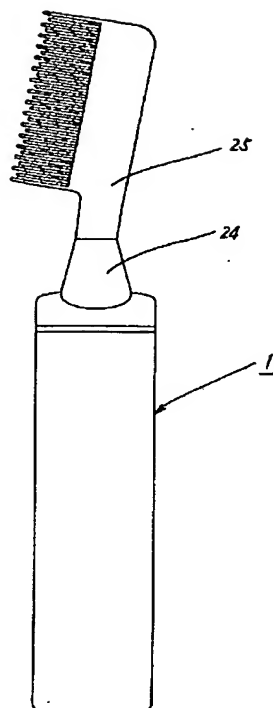
【図2】図1の一部断面の背面図。

- 【図3】軟質の袋体を示す一部断面の正面図。  
 【図4】図3の底面図。  
 【図5】図3の軟質の袋体を容器本体の口部材に取り付ける状態を示す要部拡大図。  
 【図6】弁を示す上面図。  
 【図7】図6の正面の断面図。  
 【図8】図3の軟質の袋体を容器本体の口部材に取り付けた状態を示す要部拡大図。  
 【図9】第2例を示す、軟質の袋体を容器本体の口部材に取り付ける状態を示す拡大図。  
 【図10】第2例を示す、軟質の袋体を容器本体の口部材に取り付けた状態を示す拡大図。  
 【図11】第3例を示す、軟質の袋体を容器本体の口部材に取り付ける状態を示す拡大図。  
 【図12】図11の底面図。  
 【図13】第3例を示す、軟質の袋体を容器本体の口部材に取り付けた状態を示す拡大図。  
 【図14】図13の底面図。  
 【図15】第4例を示す、軟質の袋体を容器本体の口部材に取り付ける状態を示す拡大図。  
 【図16】第4例を示す、軟質の袋体を容器本体の口部材に取り付けた状態を示す拡大図。  
 【符号の説明】
- |    |           |     |        |
|----|-----------|-----|--------|
| 1  | 容器本体      | * 9 | 弁      |
| 2  | 液室（液体貯溜室） | 10  | 内側孔    |
| 3  | 軟質の袋体     | 11  | 接続筒部   |
| 4  | 筒状部材      | 11a | 押下部    |
| 5  | 鍔部        | 12  | 弾撥体    |
| 5a | 接続口部      | 13  | シリンダー  |
| 5b | 全周突起      | 13a | 端面     |
| 5c | 全周突起      | 14  | 弾性環状部  |
| 5d | 凹溝        | 15  | 弁      |
| 5e | 凸部        | 16  | 内孔     |
| 6  | 栓体        | 17  | 外周リング部 |
| 6a | 全周溝       | 18  | 弁蓋     |
| 7  | 口部材       | 19  | 円周突起   |
| 8  | ピストン部     | 20  | 連結片    |
| 8a | 端面        | 21  | 押圧部材   |
|    |           | 22  | 吐出口部   |
|    |           | 23  | 凹部     |
|    |           | 24  | 連結部材   |
|    |           | 25  | ノズル部材  |
|    |           | 26  | 薄膜蓋部   |
|    |           | 27  | 先鋭部    |
|    |           | 28  | 接続口部   |
|    |           | 28a | 薄膜蓋部   |
|    |           | 28b | 薄膜周縁   |
|    |           | 28c | 肉厚部    |
|    |           | 28d | 凹部     |
|    |           | 29  | 全周突起   |
|    |           | 30  | ピストン部  |
|    |           | 31  | 筒部     |
|    |           | 32  | 先鋭部    |
|    |           | 32a | 内孔     |
|    |           | 32b | 筒内部    |
|    |           | 33  | 凸条     |
|    |           | 34  | 鍔部     |
|    |           | 35  | 筒状部材下部 |
|    |           | 36  | 全周先鋭部  |
|    |           | 37  | 円周突起   |
- \*

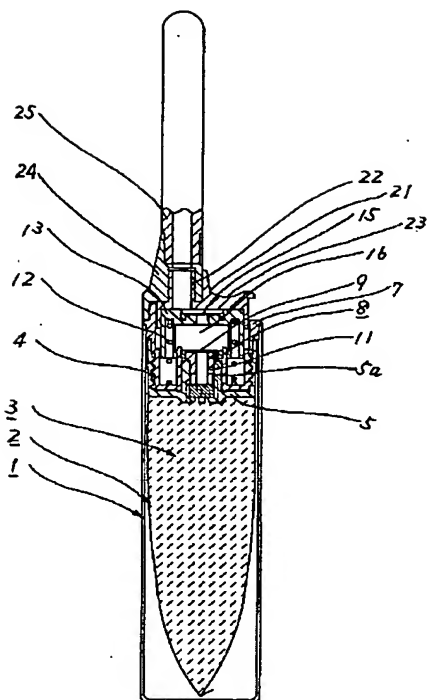
【図7】



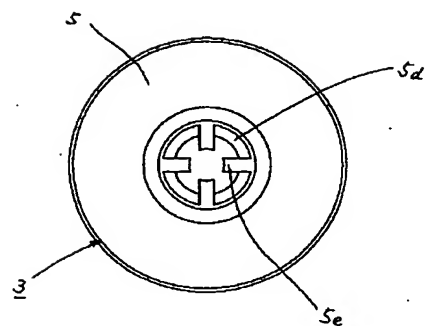
【図1】



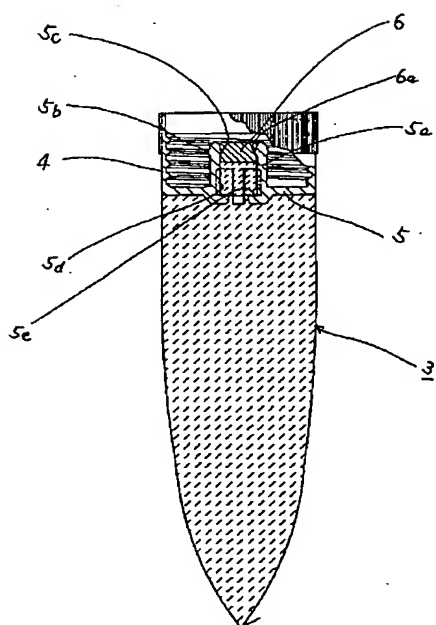
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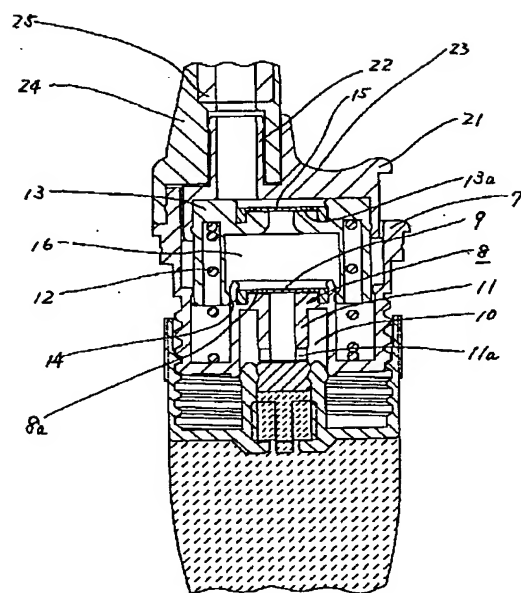
【図4】



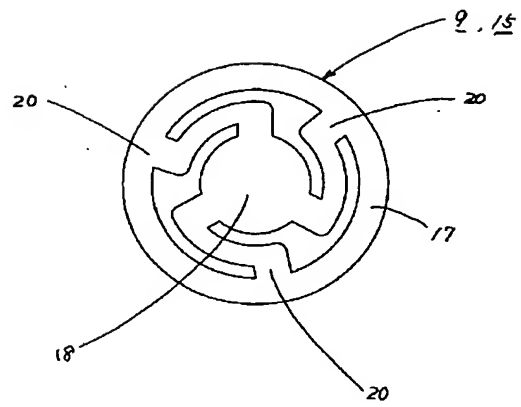
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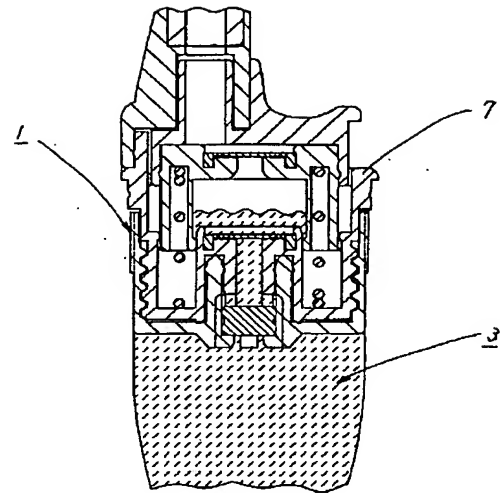
【図5】



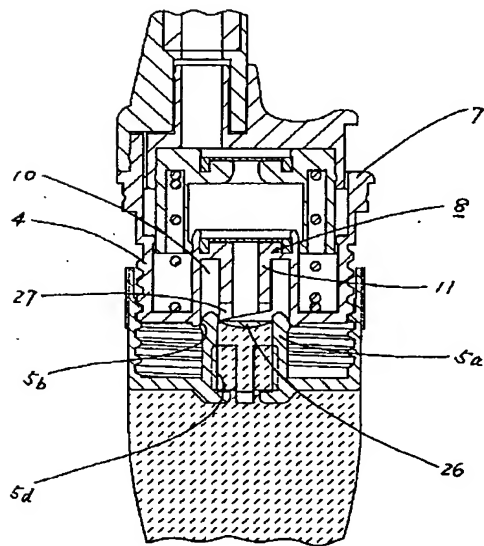
【図6】



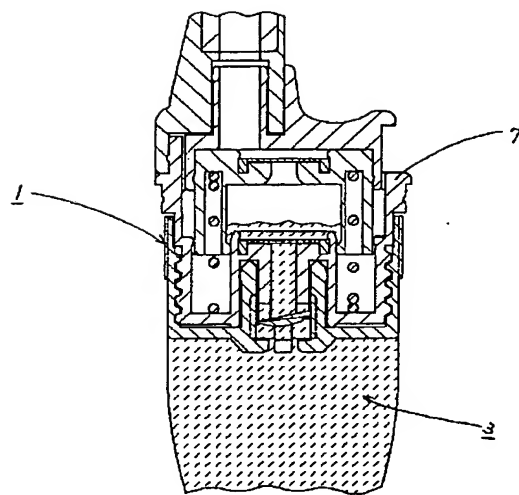
【図8】



【図9】

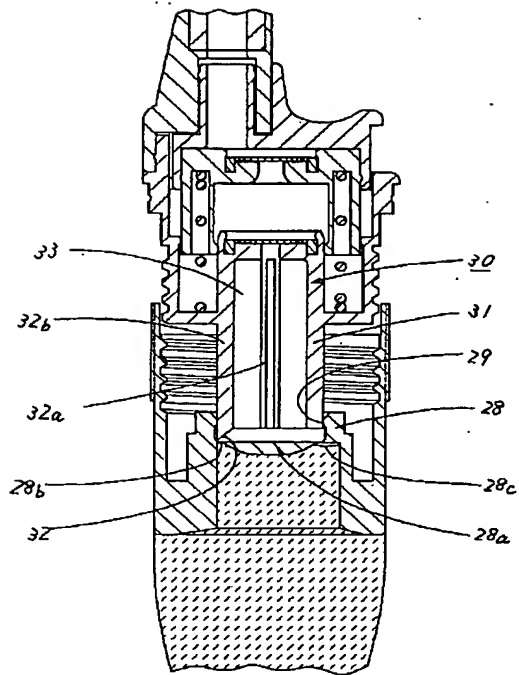


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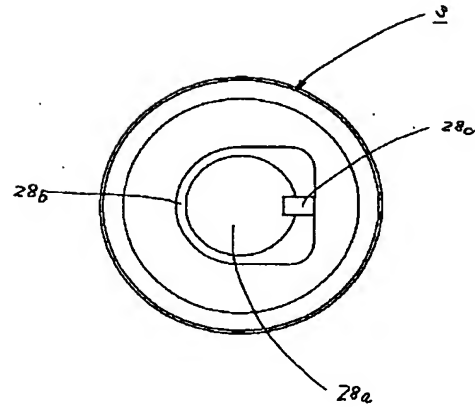




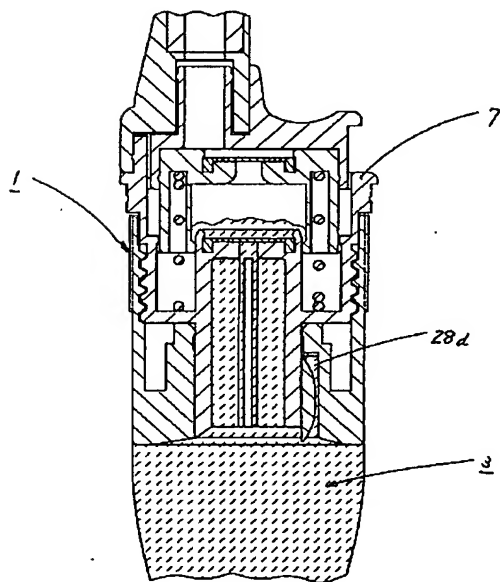
【図11】



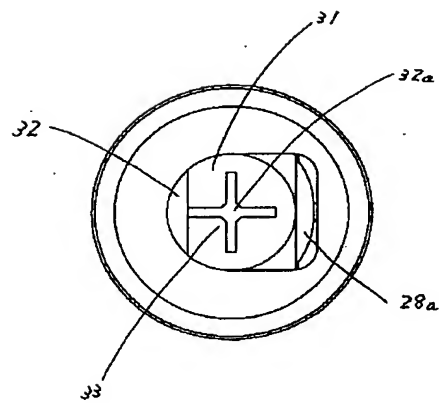
【図12】



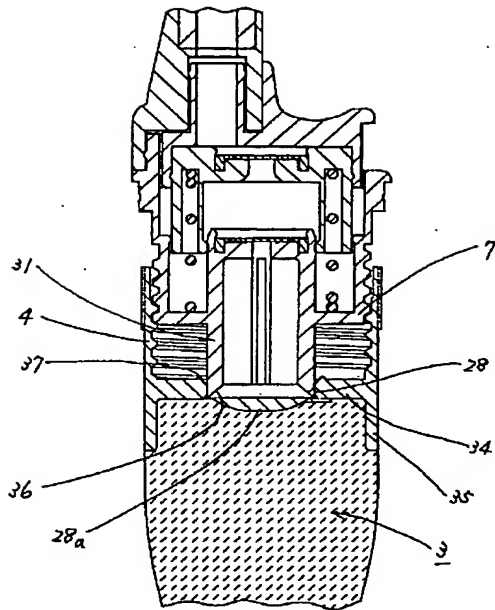
【図13】



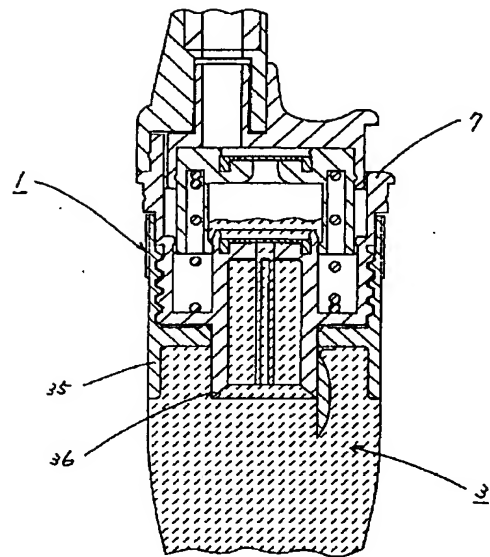
【図14】



【図15】



【図16】



# PATENT ABSTRACTS OF JAPAN

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(71)Applicant : PENTEL KK

(22)Date of filing : 18.08.1998

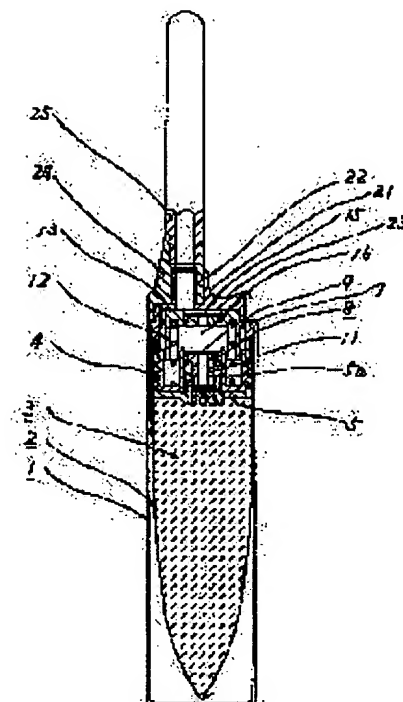
(72)Inventor : USAMI HIDEYUKI

## (54) CARTRIDGE TYPE DISCHARGE VESSEL

## (57)Abstract:

**PROBLEM TO BE SOLVED:** To enable a liquid storage chamber to be mounted on a connection sleeve simply by forming a connection sleeve at a connection part relative to the liquid storage chamber of a discharge vessel, allowing the connection sleeve to be fitted in the liquid storage chamber in closed relation, and rendering the inside volume of the connection sleeve smaller than the insertion volume of the connection sleeve to the liquid storage chamber.

**SOLUTION:** In a cartridge type discharge vessel for liquid such as hair liquid, a vessel main body 1 is formed by including a bag body 3 therein, and the bag body 3 is secured to the lower side wall surface of a cylindrical member 4. In a piston 8, an inside hole is made, and a connection sleeve 11 is included in the inside hole, and further the lower end of the connection sleeve 11 is made into a press-down part. The press-down part is to permit the whole of a plug to be pressed downward to open during the mounting of the bag body 3 onto the vessel main body 1. Herein, the inside volume of the connection sleeve 11 is set to be smaller than the inside volume of a connection mouth part after the connection of a plug. In addition, a cylinder 13 urged upward by means of a spring 12 is secured sealingly slidably relative to the piston part 8.



## LEGAL STATUS

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31.05.2004

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[Date of registration]

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**CLAIMS**

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[Claim(s)]

[Claim 1] The cartridge-type discharge vessel characterized by making the inside volume of the connection cylinder part of said discharge vessel fewer than the insertion volume to the inside of said liquid reservoir room of a connection cylinder part while being in the cartridge-type discharge vessel which makes the liquid of a liquid reservoir room breathe out from the delivery of a discharge vessel, forming a connection cylinder part in the connection to the liquid reservoir room of said discharge vessel and making said liquid reservoir room carry out sealing attachment of the connection cylinder part of the discharge vessel.

[Claim 2] The cartridge-type discharge vessel characterized by being a discharge vessel according to claim 1, having formed the connection cylinder part also in the connection of said liquid reservoir room, and attaching the connection cylinder part of said discharge vessel in the connection cylinder part.

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[Translation done.]

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## DETAILED DESCRIPTION

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### [Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to the cartridge-type discharge vessel of liquids, such as a charge for a haircut, hair dyeing liquid, hair-fostering liquid, the milky lotion for makeup, a hand cream, foundation, the shampoo for a shampoo, a rinse, liquefied toothbrushing powder, mayonnaise, catsup, a paste, and paints.

[0002]

[Description of the Prior Art] There is JP,54-34641,U as an example of a cartridge-type discharge vessel which makes the liquid of a liquid reservoir room breathe out from the delivery section. In drawing 4 of said official report, consist of a drum section A and the head section D, and a drum section A consists of pars intermedia C which forms the middle room 8 which connects the tubed part B equipped with the fluid hold section 7, said fluid hold section 7, and said head section D. The fluid hold section 7 has the good change product device 12 in which the content volume is closed in the state of sealing if change is possible, and is equipped with the check valve 9 between the head section D and the middle room 8 and between the fluid hold section 7 and the middle room 8. After attaching the good change product device 12 in a tube-like object 1, by making the head section D press, from a nozzle 10, a fluid can be breathed out and closed.

[0003]

[Problem(s) to be Solved by the Invention] However, if it was in the above-mentioned conventional technique, as it faced attaching the good change product device 12 in a tube-like object 1, and the fluid of the fluid hold section 7 fell and it did not come out, the good change product device 12 needed to be grasped upward, and it needed to insert in the tube-like object 1 carefully, and was a very difficult activity. moreover, after attaching the good change product device 12 in a tube-like object 1, in order to be able to breathe out a fluid and to close it from a nozzle 10 in use pressing the lower part of the good change product device 12, and making a fluid the upper part -- the residual air of the fluid hold section 7 upper part -- the middle room 8 side -- \*\*\*\*\*ing -- the check valve 9 neighborhood -- a fluid -- liquid -- it is said that it is made dense -- The so-called pump-priming actuation was required, and the handling at the time of the beginning of using and exchange of a spare cartridge was very troublesome.

[0004]

[Means for Solving the Problem] This invention is made in order to solve the above-mentioned trouble, and it is in the cartridge-type discharge vessel which makes the liquid of a liquid reservoir room breathe out from the delivery of a discharge vessel. While forming a connection cylinder part in the connection to the liquid reservoir room of said discharge vessel and making said liquid reservoir room carry out sealing attachment of the connection cylinder part of the discharge vessel, let it be a summary to have made the inside volume of the connection cylinder part of said discharge vessel fewer than the insertion volume to the inside of said liquid reservoir room of a connection cylinder part.

[0005]

[Function] If the connection cylinder part of a discharge vessel is attached in a liquid reservoir room, the liquid of the liquid reservoir interior of a room will go up on the 1st valve by the volume ratio of the inside volume of the connection cylinder part, and the insertion volume to the inside of the liquid reservoir room of a connection cylinder part.

[0006]

[Example] An example is explained based on an accompanying drawing. The body 1 of a container has held the elastic bag body 3 which forms the liquid room (liquid reservoir) 2 in the interior. Use of the elastic bag body 3 is a means easy when it contracts according to consumption of the liquid to hold and mixing of the open air can be prevented. This elastic bag body 3 is attached so that a liquid spill may not be carried out to the bottom peripheral wall side of the tubed part material 4 made of synthetic resin with heat sealing etc. Moreover, the flange 5 is formed in the inner circle wall

side lower part of the tubed part material and it has connection regio-oralis 5a in center of the flange 5 (refer to drawing 1 and drawing 2 ). It is the tubed configuration where said connection regio-oralis 5a projects to the upper part of a flange 5 in this example, and perimeter projection 5b is formed near the upper limit of a periphery wall surface, perimeter projection 5c is formed near the upper limit of an inner circle wall side, and 5d of concaves and heights 5e are formed in one place thru/or two or more places down the inner circle wall side, respectively. Although fitting arrangement of the plug 6 is carried out in the inside upper part of connection regio-oralis 5a, perimeter slot 6a was formed in this plug 6 at the peripheral face, it engaged with perimeter projection 5c of the inner skin of connection regio-oralis 5a which this perimeter slot 6a mentioned above, and connection regio-oralis 5a is sealed (refer to drawing 3 and drawing 4 ).

[0007] The opening member 7 has the piston section 8 inside. The valve 9 which can be opened to the drawing upper part is attached in the piston section 8. Moreover, the inside hole 10 is formed in the piston section 8, among those it has the connection cylinder part 11 in a side hole 10, and the lower limit of the connection cylinder part 11 has become depression section 11a which cut and lacked a part of end face. in case depression section 11a equips the body 1 of a container with said elastic bag body 3, push the sealed plug 6 -- it is for unstopping in total. Here, the volume inside the connection cylinder part 11 is set up so that it may become smaller than the content volume of connection regio-oralis 5a after a plug 6 is engaged. If it explains by the case of this example concretely, the volume inside the connection cylinder part 11 (depression section 11a is included) is formed in two cc, and the volume of the meat of the connection cylinder part 11 (depression section 11a is also included) inserted in connection regio-oralis 5a has become one cc.

Moreover, the content volume of connection regio-oralis 5a is formed in three cc. About an operation, it mentions later.

[0008] Although the cylinder 13 energized by the drawing upper part by \*\*\*\*\* 12 is attached possible [ fluid-tight sliding ] to said piston section 8, the elastic annular projected part 14 uniquely prepared in the inner circle wall of the cylinder 13 is the fluid-tight sliding section to the peripheral wall of said piston section 8. Moreover, the valve 15 which can be opened to the drawing upper part as well as said valve 9 is attached in the cylinder 13. The valve 15 serves as an outlet of the liquid which came out from the valve 9 to the inner hole 16 of said cylinder 13 (refer to drawing 5 ).

[0009] In addition, if said valve 9 and valve 15 are explained in full detail, the operculum 18 used as a substantial valve is located in the inside pars intermedia of the periphery ring section 17, and the periphery projection 19 is formed in the inferior surface of tongue of the operculum 18. When this periphery projection 19 touches end-face 8a of said piston section 8, and end-face 13a of a cylinder 13, the extension to a lower part is prevented. Moreover, said periphery ring section 17 and operculum 18 are connected by the radii-like three pieces 20 of connection (refer to drawing 6 and drawing 7 ). It opens and closes by the lightest possible force, and, and yet, whenever [ sealing ] has high structure. As an example of the quality of the material of said valve, moreover, silicone rubber and nitrile rubber, Acrylic rubber, a fluororubber, natural rubber, chloroprene rubber, isobutylene isoprene rubber, Although the film-like elasticity member which consists of monolayer structures, such as rubber-like elasticity objects, such as neoprene rubber, SBR and NBR, an elastomer, and elasticity polyethylene, PET, polyethylene, a polyvinyl chloride, and nylon, is mentioned The elasticity member of the shape of the film is good also as two-layer structures, such as what stuck polyethylene on the inferior surface of tongue of PET, and a thing which stuck polypropylene on the inferior surface of tongue of PET. Moreover, while sticking PET on the top face of what stuck polyethylene on the inferior surface of tongue while sticking PET on the top face of aluminum foil, or aluminum foil, you may be things of a three-tiered structure, such as what stuck polypropylene on the inferior surface of tongue. Furthermore, you may be what stuck polypropylene on the inferior surface of tongue of PET which carried out the coat by what stuck polyethylene on the inferior surface of tongue of PET which carried out the coat by the vinylidene chloride, or the vinylidene chloride, the thing which stuck polyethylene on the inferior surface of tongue of PET which carried out the coat by silicon oxide, the thing which stuck polypropylene on the inferior surface of tongue of PET which carried out the coat by silicon oxide, the thing which carried out the coat of the resin of a hot melt system to the inferior surface of tongue of PET. It is selectable suitably by the liquid which also uses this elastic valve in short.

[0010] The press member 21 is being fixed to the upper part of said cylinder 13, and the delivery section 22 used as the outlet of the liquid breathed out from said valve 15 is formed in the press member 21. reliance obtains an index finger etc. and a sign 23 is a crevice, when pressing the press member 21. Moreover, the nozzle member 25 is attached in the delivery section 22 of the press member 21 possible [ fluid-tight sliding ] through the connection member 24. In addition, although fluid-tight sliding of the delivery section 22 of said press member 21 is carried out by fixing the connection member 24 to the body 1 of a container in this example, said nozzle member 25 may be directly fixed to the press member 21.

[0011] Next, the example of use is explained. On the occasion of exchange of a cartridge (elastic bag body 3), first, the above-mentioned opening member 7 is removed from the body 1 of a container, next the tubed part material 4 is

removed from the opening member 7. The tubed part material 4 is grasped and the elastic bag body 3 filled up with the liquid is attached in the opening member 7 (although attachment by \*\*\*\* was illustrated in this example, various attachment-and-detachment methods are possible besides a screwed type). If the tubed part material 4 is thrust, first, connection regio-oralis 5a will enter into the inside hole 10 of the piston section 8, and will seal the inside hole 10 by perimeter projection 5b. Subsequently, depression section 11a of the connection cylinder part 11 depresses and unstops the plug 6 which has sealed connection regio-oralis 5a. It is in this condition, for example, even if it may carry out falling sideways of the body 1 of a container, and the elastic bag body 3, since the inside hole 10 of the piston section 8 is already sealed by perimeter projection 5b of connection regio-oralis 5a, the problem that the liquid with which the elastic bag body 3 was filled up falls out of the inside hole 10 is not produced.

[0012] Furthermore, if the tubed part material 4 is thrust, depression section 11a will depress a plug 6 further. Here, in the upper part 11 of a plug 6, i.e., the connection cylinder part of the opening member 7, if a plug 6 puts in 5d of concaves formed under the connection regio-oralis 5a, only the exclusion daily dose of connection regio-oralis 5a accompanying lower part migration of a plug 6 and a cylinder part 11 in the liquid it was [ liquid ] full of connection regio-oralis 5a will be pushed up through depression section 11a from 5d of concaves. If a plug 6 results in heights 5e, all the liquids which it was full of in the connection regio oralis will move to a way among the connection cylinder parts 11, but since it is set up so that it may become smaller than the content volume of connection regio-oralis 5a after the volume inside the connection cylinder part 11 is engaged in a plug 6 as above-mentioned, the operculum 18 of a valve 9 is pushed up without having been settled in the connection cylinder part 11, and an inner hole 16 is arrived at. this -- a valve 9 -- minding -- the connection cylinder part 11 of the liquid room (liquid reservoir room) 2 and the piston section 8, and the inner hole 16 of a cylinder 13 -- liquid -- it means that it will be in the condition of a free passage densely, and the following preparation used was made Fig. 8 is an important section enlarged drawing showing the condition (the following use preparation completion) of having attached the elastic bag body 3 in the opening member 7 of the body 1 of a container.

[0013] If the body 1 of a container is grasped and the press member 21 is pressed in the aforementioned condition, a cylinder 13 will resist the resiliency of \*\*\*\*\* 12 and will slide on a drawing lower part. Subsequently, if press of the press member 21 is canceled, a cylinder 13 slides on the drawing upper part (return), at this time, a valve 9 will open wide and a liquid will be sucked up by the resiliency of \*\*\*\*\* 12 from the inside of the cylinder part 11 of the piston section 8 to the inner hole 16 of a cylinder 13. Next, if the press member 21 is pressed, a cylinder 13 slides on a drawing lower part again, at this time, a valve 15 will open wide and a liquid will carry out the regurgitation from the inside of the inner hole 16 of a cylinder 13 to the direction of the discharge opening (not shown) of the nozzle member 25. If press of the press member 21 is canceled here, a cylinder 13 slides on the drawing upper part with the snapping power of \*\*\*\*\* 12 again (return), a valve 9 will open wide, and a liquid will be sucked up from the inside of the cylinder part 11 of the piston section 8 to the inner hole 16 of a cylinder 13, and the following preparation used will be made.

[0014] Fig. 9 is the 2nd example of this invention. The same configuration as said example omits the explanation. In this 2nd example, the thin film covering device 26 is formed in connection regio-oralis 5a of a precedent instead of the plug 6 by which fitting arrangement is carried out at connection regio-oralis 5a and one. Moreover, the acute section 27 is formed instead of depression section 11a of connection cylinder part 11 lower limit of a precedent. The end face of the acute section 27 is the configuration which cut and lacked the part like the precedent.

[0015] If the tubed part material 4 is thrust on the occasion of exchange of a cartridge (elastic bag body 3), first, connection regio-oralis 5a will enter into the inside hole 10 of the piston section 8, and will seal the inside hole 10 by perimeter projection 5b. Subsequently, the acute section 27 of the connection cylinder part 11 cuts off and unstops the thin film covering device 26 which has sealed connection regio-oralis 5a. It is in this condition, for example, even if it may carry out falling sideways of the body 1 of a container, and the elastic bag body 3, since the inside hole 10 of the piston section 8 is already sealed by perimeter projection 5b of connection regio-oralis 5a, the problem that the liquid with which the elastic bag body 3 was filled up falls out of the inside hole 10 is not produced. Furthermore, in the upper part 11 of the thin film covering device 26, i.e., the connection cylinder part of the opening member 7, if the tubed part material 4 is thrust, only the exclusion daily dose of connection regio-oralis 5a accompanying lower part migration of the thin film covering device 26 and the connection cylinder part 11 in the liquid it was [ liquid ] full of connection regio-oralis 5a will be pushed up through the acute section 27 from 5d of concaves. Fig. 10 is an important section enlarged drawing showing the condition (the following use preparation completion) of having attached the elastic bag body 3 in the opening member 7 of the body 1 of a container.

[0016] Figs. 11 thru/or 14 are the 3rd example of this invention. The same configuration as said example omits the explanation. In this 3rd example, thin film covering device 28a of the connection regio oralis 28 and one is formed in the connection regio oralis 28. Moreover, the perimeter projection 29 is formed near the upper limit of an inner circle

wall side (upper part of thin film covering device 28a). The lower part of the piston 30 serves as the cylinder part 31 which fits into the perimeter projection 29 of said connection regio-oralis 28 inner-circle-wall side, and the acute section 32 for cutting off thin film covering device 28a is formed in the lower limit. Inner hole 32a of a cylinder part 31 is the hole of the variant cross-section configuration of having two or more protruding lines 33, in order to make small the volume ratio to the volume of \*\*\*\*\* 32b. Although the periphery section of thin film covering device 28a is thin film periphery 28b in consideration of the ease of cutting at the time of cutting off, a part of periphery section is thick section 28c. Without this thick section 28c being cut off by the acute section 32 in the case of attachment of the cartridge mentioned later, it is crooked in a drawing lower part as the acute section 32 enters into the connection regio-oralis 28. It is for preventing thin film covering device 28a being cut off, and dropping out. The crevice of 28d of reference marks is an opening for collapsing thin film covering device 28a which left thick section 28c, was cut off and depressed by the cylinder part 31 into the connection regio-oralis 28.

[0017] If the tubed part material 4 is thrust on the occasion of exchange of a cartridge (elastic bag body 3), first, the acute section 32 of a cylinder part 31 enters into the connection regio-oralis 28, and it will fit into the perimeter projection 29 and will be sealed. Subsequently, the acute section 32 of a cylinder part 31 cuts off and unstops thin film covering device 28a which has sealed the connection regio-oralis 28. It is in this condition, for example, even if it may carry out falling sideways of the body 1 of a container, and the elastic bag body 3, since the acute section 32 of a cylinder part 31 is already sealed by the perimeter projection 29 of the connection regio-oralis 28, the problem that the liquid with which the elastic bag body 3 was filled up falls outside is not produced. Furthermore, if the tubed part material 4 is thrust, only the exclusion daily dose of the connection regio-oralis 28 accompanying thin film covering device 28a and lower part migration of a cylinder part 31 in the liquid it was [ liquid ] full of the connection regio-oralis 28 will be pushed up up. Fig. 13 is an important section enlarged drawing showing the condition (the following use preparation completion) of having attached the elastic bag body 3 in the opening member 7 of the body 1 of a container.

[0018] Figs. 15 thru/or 16 are the 4th example of this invention. The same configuration as said example omits the explanation. This 4th example does not have a downward part from thin film covering device 28a among the connection regio-oralis 28 in said 3rd example, and the flange 34 is formed in the surroundings of the connection regio-oralis 28. The periphery of a flange 34 is united with the tubed part material lower part 35 extended in the drawing lower part. Moreover, the lower limit of a cylinder part 31 serves as the perimeter acute section 36 which is different in the 3rd example and by which the inside taper-like cutting edge was formed in the perimeter. The periphery projection 37 is formed in the top face of a flange 34. If the tubed part material 4 is thrust on the occasion of exchange of a cartridge (elastic bag body 3), the perimeter acute section 36 will enter into the connection regio-oralis 28, it will fit into the connection regio-oralis 28, and the 1st sealing will be made. Subsequently, the perimeter acute section 36 cuts off and unstops thin film covering device 28a. Furthermore, if the tubed part material 4 is thrust, a liquid will be pushed up only for the exclusion daily dose accompanying thin film covering device 28a and lower part migration of a cylinder part 31 up. The tubed part material 4 thrusts, said periphery projection 37 is forced on the base of the opening member 7 in the state of an end, and sealing of the 2nd of cartridge attachment is made. Fig. 16 is an important section enlarged drawing showing the condition (the following use preparation completion) of having attached the elastic bag body 3 in the opening member 7 of the body 1 of a container. In addition, the tubed part material lower part 35 is formed in order to protect so that the elastic bag body 3 may touch the perimeter acute section 36 and may not get damaged.

[0019]

[Effect of the Invention] The cartridge-type discharge vessel of this invention is in the cartridge-type discharge vessel which makes the liquid of a liquid reservoir room breathe out from the delivery of a discharge vessel. While forming a connection cylinder part in the connection to the liquid reservoir room of said discharge vessel and making said liquid reservoir room carry out sealing attachment of the connection cylinder part of the discharge vessel Since the inside volume of the connection cylinder part of said discharge vessel was made fewer than the insertion volume to the inside of said liquid reservoir room of a connection cylinder part Without worrying about \*\*\*\*\* of a liquid, the connection cylinder part of a discharge vessel can be equipped with a liquid reservoir room, and a liquid can be made to breathe out easily after cartridge wearing simply.

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[Translation done.]



\* NOTICES \*

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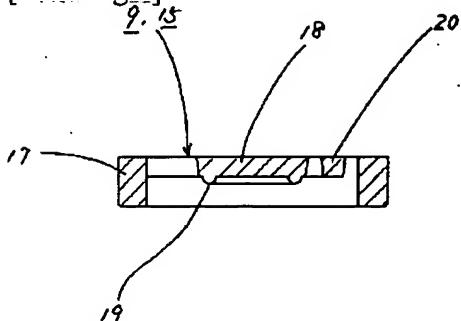
1. This document has been translated by computer. So the translation may not reflect the original precisely.
2. \*\*\*\* shows the word which can not be translated.
3. In the drawings, any words are not translated.

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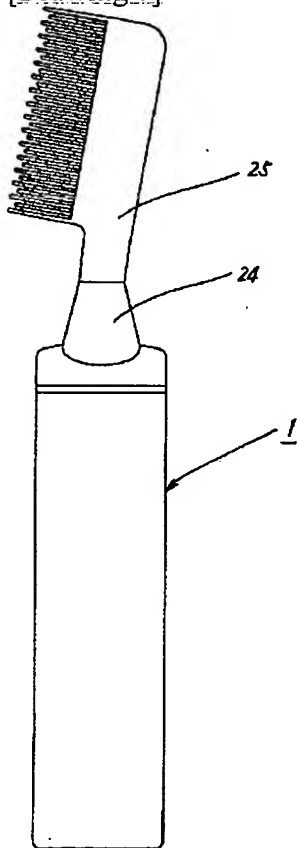
DRAWINGS

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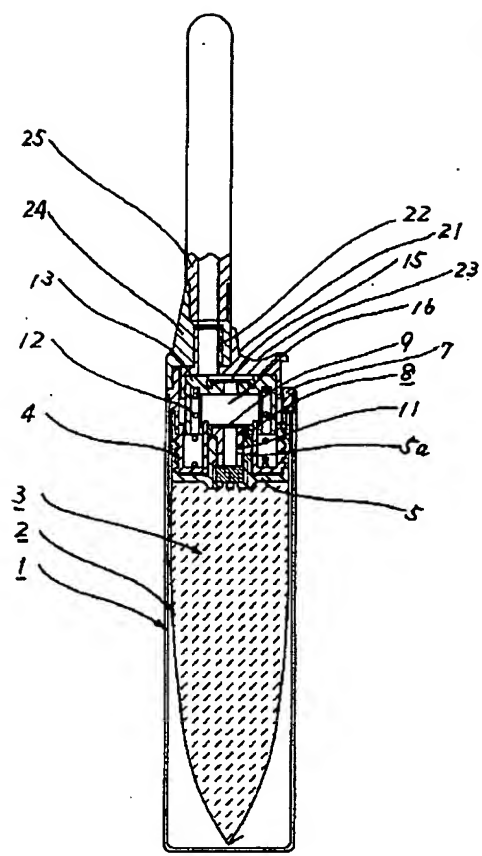
[Drawing 7]



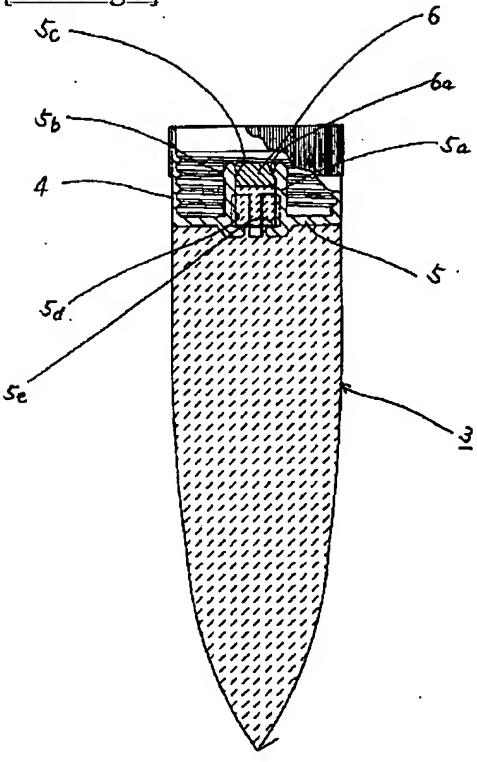
[Drawing 1]



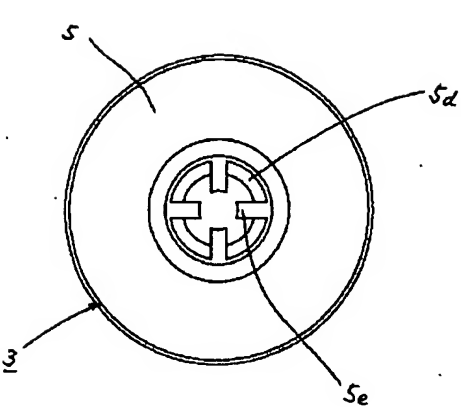
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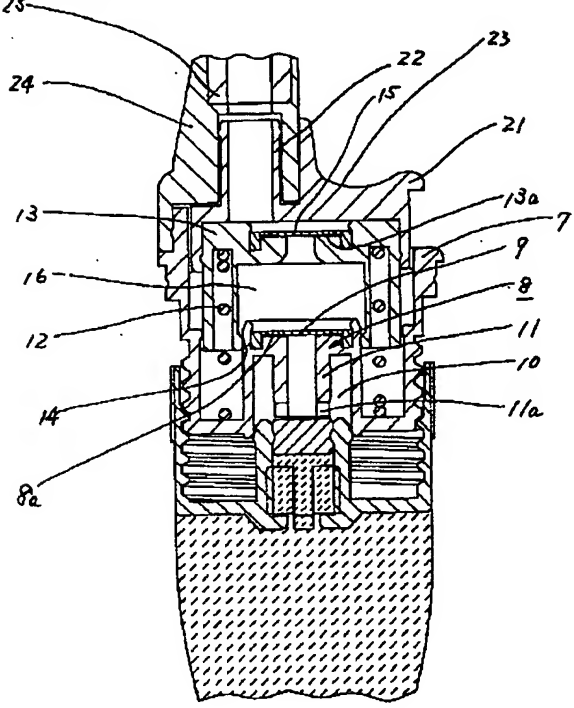
[Drawing 3]



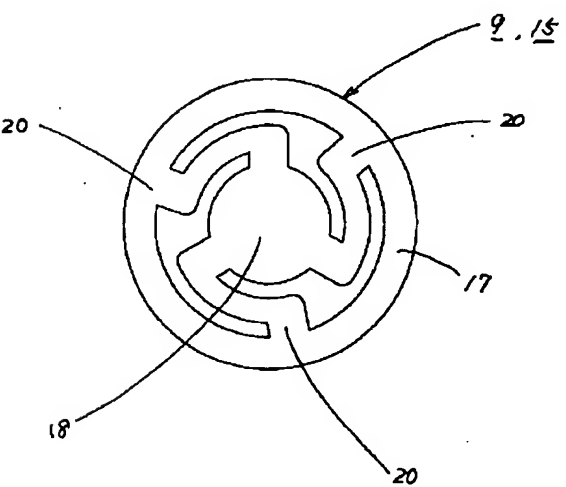
[Drawing 4]



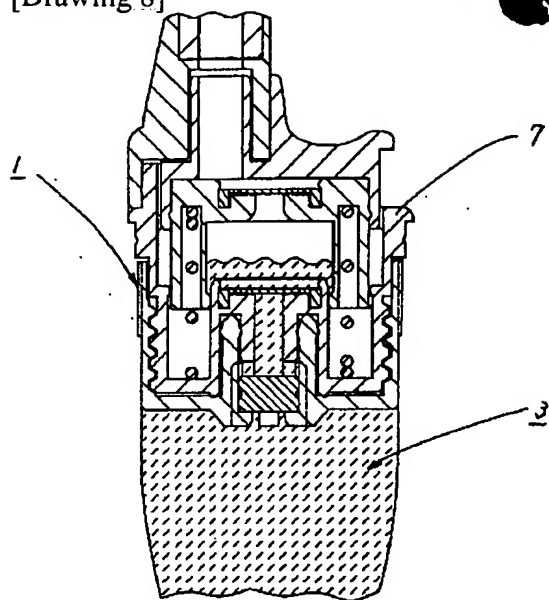
[Drawing 5]



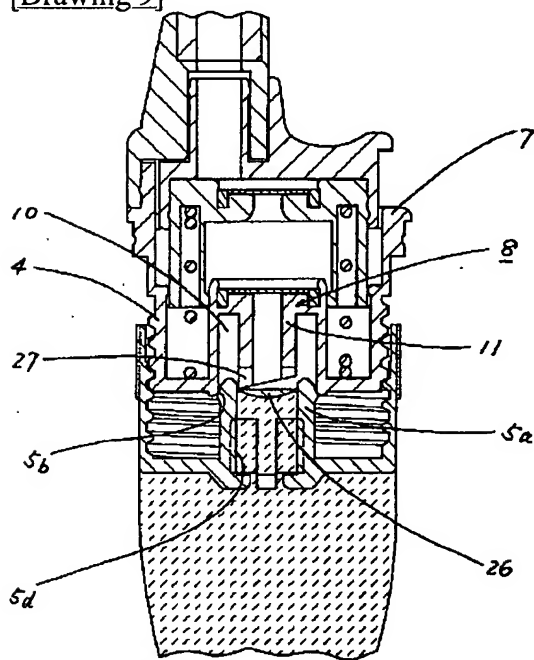
[Drawing 6]



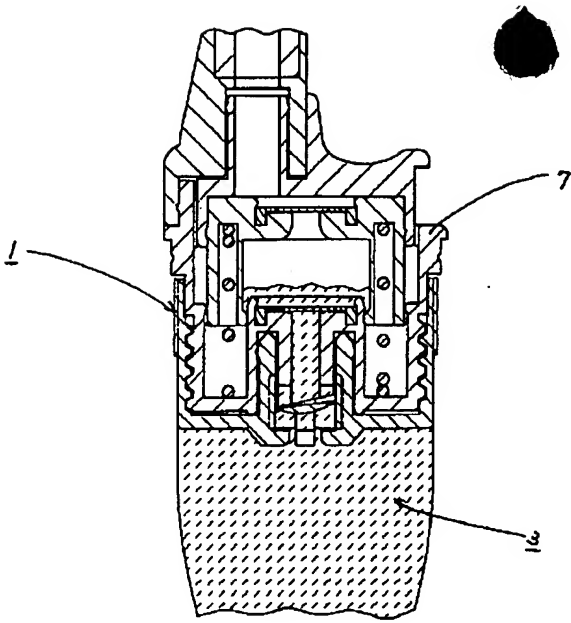
[Drawing 8]



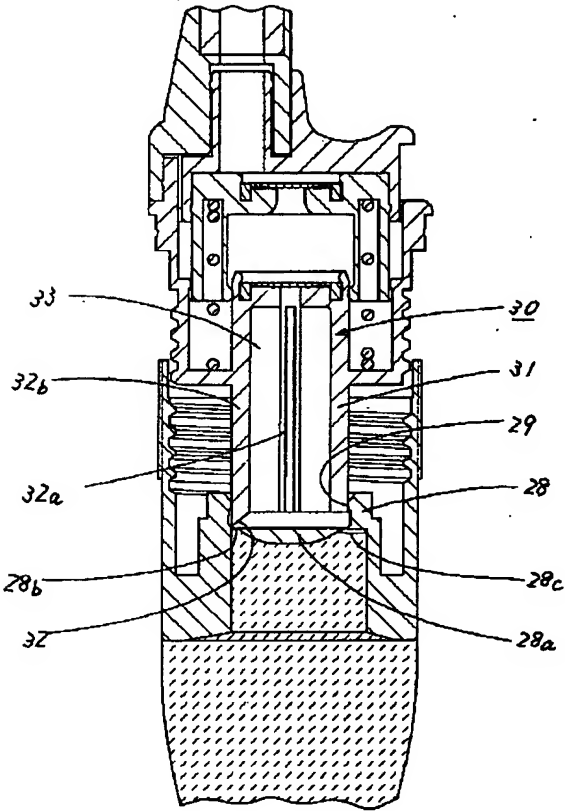
[Drawing 9]



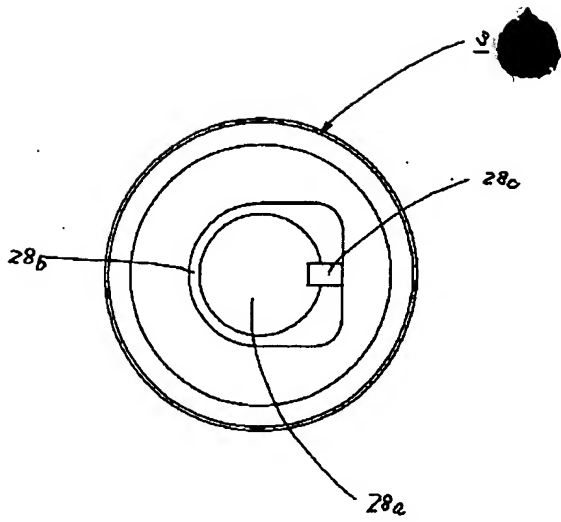
[Drawing 10]



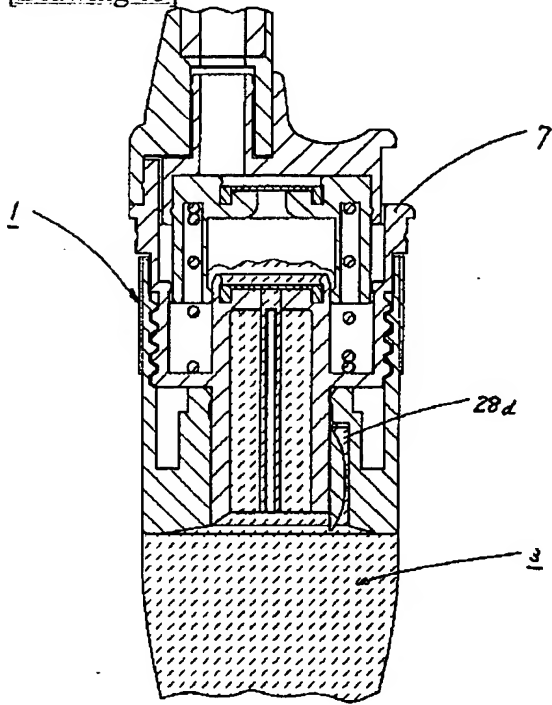
[Drawing 11]



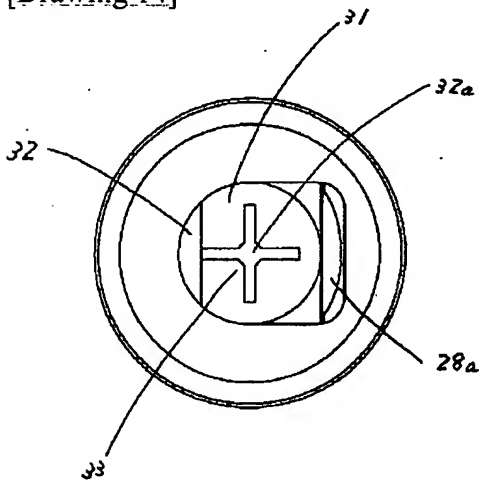
[Drawing 12]



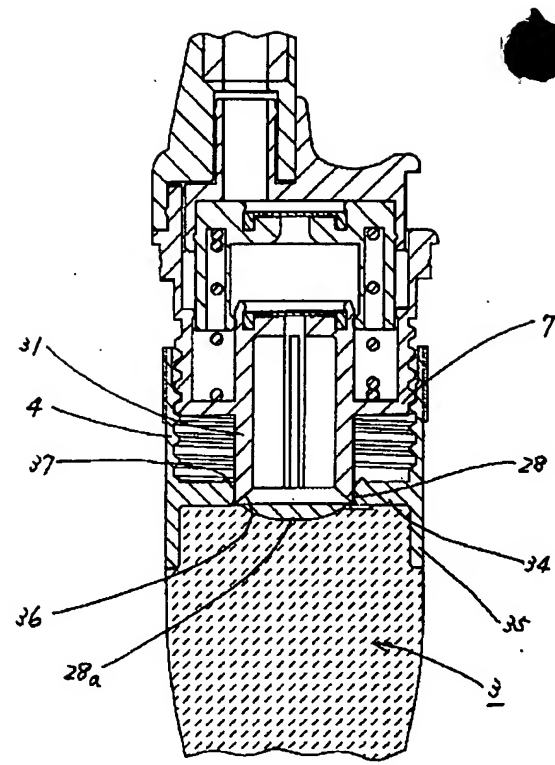
[Drawing 13]



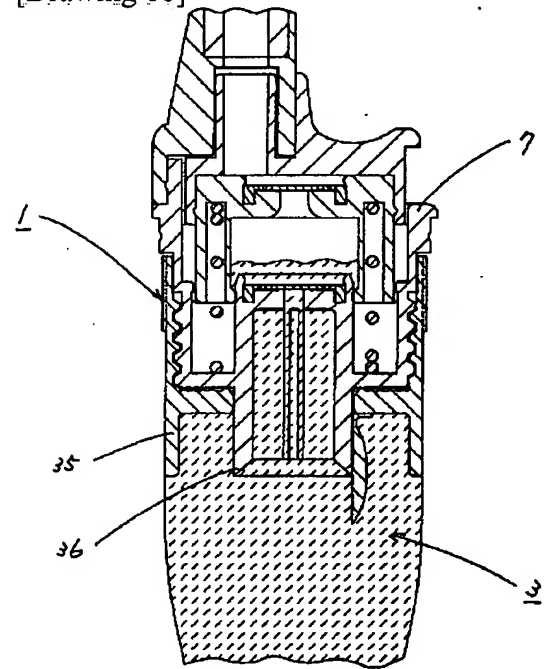
[Drawing 14]



[Drawing 15]



[Drawing 16]



[Translation done.]

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